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ABSTRACT

The present invention is directed to a system and method for providing a spectrally tailored Raman pump. The system and method employ an incoherently beam combined laser configuration to combine output beams from a plurality of emitters. Embodiments of the present invention provide emitter devices with electrodes adapted to allow addressability of various emitters. In some embodiments, each emitter is individually addressable thereby allowing the output power of each emitter to be controlled by a drive current. In another embodiment, blocks of emitters are coupled to a single current source. Each emitter of a block is operated at a common power level. In certain embodiments, blocks of emitters are driven at current levels significantly greater than the threshold current for the emitters to increase operating efficiency. Moreover, certain embodiments vary emitter spacing to increase linear power density and/or to allocate additional power to the blue end of the Raman pump. By providing spectral tailoring, embodiments of the present invention are capable of providing reasonable flat Raman gain over relatively broad spectrum.

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